

# NATIONAL HONEY REPORT



United States  
Department of  
Agriculture

Agricultural Marketing Service  
Fruit and Vegetable Programs  
Market News Branch

2202 Monterey St. Suite 104-F  
Fresno, CA 93721  
Phone: 559-487-5178 FAX: 559-487-5199  
Federal Market News Service  
21 North 1<sup>st</sup> Ave., Suite 224  
Yakima, WA 98902  
Phone: 509-575-8615 FAX: 509-575-5648

Website: [www.ams.usda.gov/marketnews.htm](http://www.ams.usda.gov/marketnews.htm)

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## HONEY MARKET FOR THE MONTH OF JANUARY 2005

### IN VOLUMES OF 10,000 POUNDS OR GREATER UNLESS OTHERWISE STATED

Prices paid to beekeepers for extracted, unprocessed honey in major producing states by packers, handlers & other large users, cents per pound, f.o.b. or delivered nearby, containers exchanged or returned, prompt delivery & payment unless otherwise stated.

- REPORT INCLUDES BOTH NEW AND OLD CROP HONEY -

**ARKANSAS** - Soybean, light amber, 75¢

**CALIFORNIA** - Mixed Flowers, extra light & light amber,  
65¢ - \$1.05

**FLORIDA** - Gallberry, extra light amber, \$1.15  
- Gallberry, light amber, \$1.00  
- Gallberry, cut comb, \$1.50  
- Orange/Saw Palmetto, extra light amber, \$1.05  
- Orange Blossom, extra light amber, \$1.15  
- Saw Palmetto, extra light amber, \$1.15  
\* All Purchases, previously contracted

**IDAHO** - Alfalfa, white, \$1.04  
- Alfalfa, extra light amber, 88¢  
- Alfalfa, light amber, 69 - 84¢  
- Mixed Flowers, amber, 65¢  
- Melter Honey, amber, 29¢ (small lot)

**KANSAS** - Alfalfa, extra light amber, 85¢  
- Alfalfa, light amber, 67 ½ - 75¢ (small lots)

**MICHIGAN** - Alfalfa, extra light & light amber, 75¢  
- Clover, white, 98¢  
- Star Thistle, white, \$1.03

**MINNESOTA** - Alfalfa, extra light amber, 90¢  
- Clover, white, \$1.05  
- Basswood/Lindon/Mint, white, \$1.05  
- Basswood/Lindon/Mint, extra light amber, \$1.05

**MONTANA** - Clover, white, \$1.00 - 1.10

**NEW YORK** - Alfalfa, white, \$1.00  
- Alfalfa, light amber, 75¢

**NORTH DAKOTA** - Alfalfa, white, \$1.00  
- Alfalfa, extra light amber, 88-90¢  
(higher price, small lot)  
- Alfalfa, light amber, 70¢  
- Clover, white, 85¢ - \$1.10  
- Clover, extra light amber, 88¢ - \$1.05  
- Clover, light amber, \$1.05 - 1.38  
- Melter Honey, amber & dark amber, 40¢

**OHIO** - Alfalfa, extra light amber, 90¢

**OREGON** - Alfalfa, white, \$1.01  
- Alfalfa, extra light amber, \$1.01  
- Clover, white, \$1.00 - 1.10

**SOUTH DAKOTA** - Alfalfa, white, \$1.05  
- Clover, white, 95¢ - \$1.15

**WASHINGTON** - Mixed Flowers, light amber, 66¢  
- Mixed Flowers, amber, 62¢  
- Star Thistle, White, \$1.00  
- Star Thistle, extra light amber, 89¢  
- Wildflowers, light amber, 66¢  
- Wildflowers, amber, 64¢

**WISCONSIN** - Alfalfa, white, 98¢ - \$1.01  
- Clover, white, \$1.05  
- Wildberry, light amber, 90¢

Prices paid to Canadian beekeepers for unprocessed bulk honey by packers & importers in U.S. currency, f.o.b. shipping point, containers included unless otherwise stated. Duty & crossing charges extra. Cents per pound.

**ALBERTA** - Clover, extra white, 95¢  
**PROVINCE NOT REPORTED** - Canola, white, 84¢

Prices paid to importers for bulk honey, duty paid, containers included, cents per pound ex-dock or point of entry unless otherwise stated.

**EAST COAST** - - -

**ARGENTINA** - Clover/Alfalfa, white, 90¢  
**PAKISTAN** - Mixed Flowers, extra light amber, 82¢

**WEST COAST** - - -

**VIETNAM** - Mixed Flowers, light amber, 50¢

**COLONY, HONEY PLANT AND MARKET CONDITIONS DURING JANUARY, 2005**

**APPALACHIAN DISTRICT - (MD, PA, VA, WV)** ... January came in balmy with sunny weather and unusually warm temperatures in the upper 50's and 60's and lows in the upper 30's and 40's, but by mid-month daily high temperatures dropped to the 20's and then again to highs in the teens with single digit lows. During this bitter cold period, several snow storms passed through the area leaving the District covered in powder. The most severe storm dumped 8-12 inches in the Maryland and Pennsylvania portion of the District leaving Virginia and West Virginia with a few inches. January ends with this precipitation still on the ground.

**ARKANSAS** ... Nectar and pollen sources are few and far between. Bee colonies are mostly strong and doing well. Weather has been warmer and wetter than normal. No honey production this time of year. Some beekeepers are feeding their colonies. The demand is pretty much the same.

**CALIFORNIA** ... Exceptionally storm weather continued from December into January. Downtown Los Angeles received 16.97" of rain from December 27<sup>th</sup> to January 10<sup>th</sup>, breaking its 15-day record. From the 6<sup>th</sup>-11<sup>th</sup>, rainfall near the mountains in Los Angeles County totaled 31.25"; 26.09" in Ventura County and 24.45" in Santa Barbara County. The water equivalent in the Sierra Nevada snowpack on January 10<sup>th</sup> was 196% of normal as snowfall totals from the 7-11<sup>th</sup> were 100-150". During the same time, several locations again broke daily-record rains. Temperatures were as much as 10 degrees below normal with fog settling in the Sacramento and San Joaquin Valleys. By the middle of January, warm weather moved into most of the State resulting in some record high temperatures in Southern California. On the 19<sup>th</sup>, daily records included 91 degrees in Santa Ana and 87 degrees in San Diego. A few days later, two more rounds of storms covered the entire State which helped maintain the above-average mountain snowpacks.

The condition of the bees ranges from good to poor. Despite the fact most bees were treated last fall and early last winter, the honey flow shut off early and the mites moved in. Continued losses are still being reported. Some bees were moved along the coast where floral sources such as mustard, fillary, acacia and manzanita provided a good food source. There were also enough favorable days for the bees to leave their hives and collect pollen and nectar. Some colonies were starting to brood up which was a good sign. Towards the end of the month, beekeepers were feeding, sorting and getting their bees ready to move into almond orchards. A few almond trees in the San Joaquin Valley were already pushing their buds. There appears to be a shortage of bees for pollination but no one is predicting how short. The California Almond Board reports there are 500,000-600,000 acres of almonds to pollinate even though removal of non-productive and storm damaged trees continues but more are being planted every year. They have created a Bee Task Force to ensure there are healthy bees to pollinate the almond crop. Migratory beekeepers, especially from the south, are reluctant to bring their bees into California because of the inspection being done for fire ants at the borders. Pollination rental fees nearly doubled from last year with most contracts being signed at \$80.00-100.00 with \$120.00 frequently reported of growers didn't finalize their contracts early. By the end of January, beekeepers were beginning to spread their hives around the orchards.

Some packers reported January sales were slow so purchases were also light. Some producers are still holding last years crop as prices have slipped the last couple of months. On the other hand, packers still have adequate inventories in their own warehouses from previous purchases so they only bought a few small lots.

Handlers were beginning to take in some wax as producers had time this winter to get it ready to sell. Most were paying the same price for cash or trade.

Queen breeders and package producers reported orders were beginning to come in for late March-April delivery. In some cases, orders were much larger than previous years.

**COLORADO** ... Weather was typical in Colorado for the month of January. There were a couple snow storms that left nice wet snow and about an inch of moisture behind. High temperatures were generally in the 40's with a couple days getting up near 50. The bees were able to get out and stretch their wings on those warm days. Many hives have been sent to California to pollinate the Almond crop at \$120/hive. Some beekeepers are concerned that losses due to the mite may be as high as 20-30 percent. There are other factors that are concerning apiarists besides the mites including low level pesticide exposure and wholesale market prices.

**FLORIDA** ... Many of the colonies are very stressed at this time. Florida is losing a significant number of colonies to mites. Chemical treatments do not seem to be as effective as they were. Colonies that are permanent to the state do seem to be doing better than colonies that are transient.

Florida had a very cold month. Pollen was limited with maple being the best source. However, pollen supplies have been off and on.

With California almond grower paying high prices for bees to pollinate their crops, some colonies may be moved west to help save the bees. Florida's citrus, watermelon and cucumber crops may be adversely affected by the lack of bees in the spring.

**GEORGIA** ... Colonies around the state were in fairly good condition. Many colonies during the month were to be in need of additional feeding with sugar or corn syrup. Populations were starting to build in the southern portion of the state as the month drew to a close and are expected to do so as well in central and northern Georgia starting in the latter portion of February. In southern Georgia, red maple began to serve as a source for both pollen and nectar as the month drew to a close. No significant sources of pollen and nectar were otherwise available during the month. Weather during January was warmer than normal for almost the first half of the month. The second half of the month varied from colder than normal (with several mornings of sub-freezing temperatures) to about average January temperatures. Moisture conditions were generally adequate statewide.

**IDAHO** ...The majority of Idaho's bees are in California. If they haven't been as of yet they will be placed in the almond orchards the first week of February. Some hives were placed into the orchards around Coachella, CA in January then moved to the Waterford area the beginning of February before they are placed in the orchards in the Modesto area. Bees use the pollen gathered from the almonds to raise their brood. No honey is made off of almond pollen as it is bitter in taste.

Beekeepers have been busy checking hives for losses and to make sure that food is given as needed. Fumagilone treatment is being applied to hives that didn't receive it last fall to control Nosema, a bacterial disease that causes diarrhea. This can affect the entire hive and eventually lead in its destruction. Bees appear to be in fairly good condition with normal winter losses. Some beekeepers continue to hear about horror stories about losses of up to 60 percent from mites. Another threat to the hives in California has been theft. There have been at least four reported incidents in the past month. One beekeeper lost 284 hives valued at \$55,000. Pollination fees are ranging from \$52.00 to \$80.00 per hive. An impending threat to U.S. Beekeepers is that of imports. U.S. apiarists are trying to stop imports of honey from China and Argentina at 40 cents per pound from entering the country. If this happens it will mean lower prices from domestic honey which would cause additional hardship from an already struggling industry.

**ILLINOIS** ... During the month of January, most of the state experienced cloudy conditions with frequent snowfalls of one to three inches. The northern section had a snowstorm mid-month with snowfall reported from 10 inches to 2 feet over the area. Temperatures were near normal for the period. The last of the month, temperatures were in the 20's in the north while warmer temperatures were in southern sections. The southern section reported tree fruit buds had already but were frozen due to colder weather moving into the areas. The colonies were overwintering well due to the warm temperatures and many days of cleansing flights were observed. Soil temperatures were abnormal as crocus was emerging through the ground in the extreme southern region.

Honey sales and the movement of wax were reported good due to little left in beekeepers hands.

**INDIANA** ... The main activities of beekeepers was removing treatment strips and preparing equipment for the spring season. Some local beekeeper meetings were held and new beekeeper workshops were well attended due to new beekeeping interest.

Beekeepers concern still centers over the Small Hive Beetle infestation throughout the State. The State Apiary Inspector advised the state's beekeepers to watch their bees and keep a good timely treatment program for their colonies. Beekeepers were advised the State has opened its borders to importation of package queens and package bees. There has been state package bees available, however demand has been high. The State Apiary Office recommends that all out-of-state package queens be checked for mites.

A follow-up of the record 22" snowfall that was reported the 24<sup>th</sup> and 25<sup>th</sup> in areas near Evansville in the southern section. The runoff created the rivers to rise at record or near record levels. The last of the month, rivers had fallen below flood levels and damage estimates were being compiled.

Honey movement was fairly good due to limited supplies in beekeepers hands. Retail sales were reported moderate.

**KENTUCKY** ... Not much to report - Bees are tucked in - flying a bit on warmer days - waiting until spring. Beekeepers getting ready for spring also.

**MICHIGAN** ... Weather conditions were very good during December and early-to mid-January. Temperatures were in the mid-50's and reached as high as the mid-60's briefly which is unusual for this time of the year. The warming spell allowed bees to make cleansing flights. The later half of the month, temperatures dropped into the single digits. Many of the commercial beekeepers in the state moved their hives to Florida, Georgia, North and South Carolina for pollinations and the persistent problem of mites for the winter months.

According to industry sources, most beekeepers reported good demand for honey from the State's packers.

**MINNESOTA** ... Minnesota bees are wintering in many different areas. Some have stayed right in Minnesota, packed and wintering in the yard. Some are in Texas and Mississippi where they are being fed. Beekeepers plan on putting out Queen boxes in February so they can raise queens and make nukes for the spring. There is some natural pollen coming in these areas but most colonies have to have supplemental feeding. One beekeeper is moving some of his hives from Texas to California to help out with the Almond pollination. Pollination fees can run as high as \$125.00 per hive plus \$11.00-12.00 per hive in transportation costs. Losses of bees to mites have ranged from as low as 5-15 percent to rumored nightmarish losses of 50-80 percent. Some beekeepers are going to Washington D. C. the beginning of February to lobby for additional funding of bee labs to find out if there are additional factors contributing to the heavy losses of American bees. Some apiarists suspect that there are other things that the mites, such as tracheal mite reoccurrences, low levels of pesticides, etc. One beekeeper indicated that pollination will be the crutch that keeps U.S. beekeepers alive for the next two years while answers are found to the losses and the hives are repopulated.

**MISSISSIPPI** ... Colonies around the state were in generally good condition. Some colonies during the month were in need of additional feeding with sugar or corn syrup, or with stores of surplus honey transferred from other hives. Populations were starting to build in the southern portion of the state as the month drew to a close and are expected to do so as well in central and northern Mississippi starting in the latter portion of February. In southern Mississippi in mid-January, red maple and a few wildflowers began serving as pollen and nectar sources. In central and northern Mississippi, red maple began to serve as pollen and nectar sources as the month came to a close. Moisture conditions during January were generally adequate in southern Mississippi and above average elsewhere in the state. Temperatures during January were alternating between warmer than normal in the first half of the month to mostly colder than normal in the southern portion of the state during the latter half of the month. In central and northern Mississippi, temperatures were warmer than normal early in the month and generally cold for the remainder of January.

**MONTANA** ... After generally mild and dry weather for most of the holiday season, January began in Montana with snow fall and sharply colder arctic air. This bitterly cold air with several light snowfalls remained entrenched over Montana until it was finally replaced mid month by warmer air and rains late the week of the 16<sup>th</sup>. For several weeks temperatures regularly averaged from zero to 10 degrees below and colder. With the warmer air front, temperatures rapidly rose from daily highs below zero early in the week to the mid-50s and warmer by week's end. Later, Billings reported high temperatures of 40 degrees F or higher on 12 consecutive days from February 17-28th, its fourth longest such January streak on record. Butte also experienced its warmest January 18-27 period (19.2 degrees above normal), breaking an 1899 record.

Beekeepers wintering colonies in California reported substantial disease problems with mites within their colonies, weakening them as the almond pollination season draws near. Mite treatment applications seem to be having limited effects against the growing resistance the mites have against such treatments. Colonies wintering in Montana had sufficient warm weather during the later half of the month to make cleansing flights and find water and seem to be in generally good health at this time.

**NEW ENGLAND** ... Winter hit hard in the Southern and coastal regions of New England with snow fall at record amounts. Snowfall estimates recorded were 43 inches in Boston MA; 36 inches in Providence RI and 50 inches in the south western part of the region. Blizzard conditions were reported across the region on the 29<sup>th</sup> with blowing and drifting snow which accumulated to 30 inches in some coastal regions and on Cape Cod.

Temperatures were mild during the first 2 weeks of the month with a high of 63 recorded on the 14<sup>th</sup>. The last 2 weeks were more seasonal with temperatures in the 20s and low 30s with a low of minus 2 on the 22<sup>nd</sup>.

**NEW YORK** ... The weather conditions were ideal during December and early to mid January. Temperatures were in the mid-50's and reached highs in the mid-60's briefly which was unusual for this time of the year. The warming spell allowed the bees to make cleansing flights. Many beekeepers continued to report mite resistant to chemical treatments during the winter months. Almost 1/3 of the state beekeepers took their hives to Florida, Georgia, South Carolina and North Carolina for pollinations.

Demand for honey by state packers and retail operations was fairly good.

**NORTH CAROLINA** ... The weather in North Carolina for the month of January went from one extreme to another. During the first part of the month, the whole state experienced spring like conditions with some areas getting close to the 70's. However, winter weather returned quickly with frigid temperatures dropping as low as 2 degrees in some areas of the mountains in the western part of the state. There has been a mixture of snow, freezing rain and sleet throughout the state this month. Beekeepers continue to feed and monitor hives for any pest and disease problems. North Carolina is implementing a new program to help boost a struggling honey bee population and increase the number of beekeepers in the state. With many tobacco farmers turning to alternative crops, the state has launched an effort to recruit more beekeepers. North Carolina State University, funded by the Golden LEAF Foundation, is offering those that qualify two free colonies of Russian honeybees with beehives. The goal is to increase the number of beekeepers and the number of hives in the state for the purpose of pollination for the increase in agricultural crops being grown. The North Carolina Department of Agriculture and Consumer Services- Plant Industry Division and the North Carolina State University-Apiculture Program have also come up with an internet site in an effort to match beekeepers that have hives for rent with growers that need the bees for pollinating. Beekeepers participating in this program will be required to comply with all Honey and Bee Industry Regulations. Honey sales remain good for the supplies available.

**NORTH AND SOUTH DAKOTA** ... January began with extremely cold weather, including -39 degrees in Grand Forks and -37 degrees in Williston on the 5<sup>th</sup>. This came a day after heavy snow fell across the region, including 7.3" in Rapid City. Another winter storm moved in on the 12<sup>th</sup> bringing near-blizzard conditions and wind chills that dropped temperatures as low as -50 degrees in Bismark. Two days later, temperatures of South Dakota were still -2. The cold weather hung on through the third week of January with many areas setting daily-record lows of -34 to -37 degrees. Finally, on the 23<sup>rd</sup>, rain, wind, ice and snow gave way to sunshine and warmer temperatures. Daytime highs were in the 30's and 40's instead of single digits. Temperatures continued to climb and by the end of the month, temperatures ranged from 10-24 degrees above normal. The mild temperatures reduced snow covers with the average in North Dakota only 2.7" compared to 14" a year ago.

Bees kept in North and South Dakota remain wrapped and sitting in sheltered winter holding yards. Migratory beekeepers went back to California to check on the condition of their bees. Some were found in less than great shape. They worked to even out the side of the colonies before they were moved into almond orchards.

Samples were taken from hives and returned to the USDA Bee Lab in Beltsville, Maryland last month. They are going to try to determine why so many bees were lost over the winter. Was it just Varroa Mites or have tracheal mites and other diseases returned.

**OKLAHOMA** ... Crazy weather in Oklahoma has the bees confused. Cold one day, warm the next. Bees seem to be beginning a good build up. All of them are bringing in pollen. Most beekeepers are feeding. We are feeding sugar syrup with Fumigillin to stimulate brood rearing. We sell 5 frame NCUs and want to be ready to start making them as soon as we can get queens around the middle of March. Small amount of honey is available but most beekeepers in this area are not selling any more.

Since Africanized Bees have been conformed in Oklahoma the DOA is working on a new Apiary Act. They are letting the beekeepers have input which is quite unique.

**OREGON** ... Oregon beekeepers with colonies wintering in California expressed concern over the general down grading of the health of their colonies by mite related diseases and viruses. In their perspective, could or will lead to a shortage of enough healthy colonies in California to be available to meet their almond customer's needs. Bees from Australia have been imported by at least one Oregon beekeeper to help supplement their native colonies. Colony rental prices discussed ranged in the \$75.00-100.00 dollar range for the start of the almond pollination.

**TENNESSEE** ... Bees are in excellent condition with good winter stores. Bees have not flown much the past two weeks due to cold weather. Some colonies have been lost due to queen losses in the fall. Some pollen is just starting to come in from maple.

**TEXAS** ... Feeding on wild flowers and what is left of the cotton crop. Colonies remain in good condition. Weather has been from 30 to the mid 70s, above average for this time of year. We have had a wetter winter than normal. Some beekeepers are feeding the hives. The supply and demand is fair.

**UTAH** ... Bees appear to be in better condition than they were last month. The hives that are going to California for almond pollination are already down there. Those beekeepers that decided not to go are having their phones ring off the hook with offers. Pollination fees range from \$65.00-110.00. A few orchardists in California are desperate that beekeepers can literally name their price and get it. Losses to mites are substantial. One beekeeper reports that their loss estimate is about 1/3 of their hives.

Retail demand for honey slipped a little right after Christmas but started to rebound the end of January. Wholesale prices are as follows: White - \$1.05 per pound and Extra Light Amber - \$.93 per pound

**WASHINGTON** ... Heavy snow finally blanketed most of the State the first few days in January. It quickly disappeared as a warm front moved in the end of the first week. Around the 14<sup>th</sup>, a front brought heavy rains across the State and record warmth, that was as much as 10 degrees above normal. This melted snow and caused flooding, especially in Western Washington. Along the coast record rains fell on the 17<sup>th</sup> and 22<sup>nd</sup> when 4.54" and 4.36" fell. A day later Vancouver set a record high of 66 degrees. By the 19<sup>th</sup>, several rivers in the Puget Sound had either flooded or were expected to flood. On the same day, Olympia set a record of 64 degrees. The Cascade Mountains also received rain instead of snow and warm temperatures that caused most the ski areas to close. Dry weather and record warmth finished the month where below-normal winter precipitation and significantly below-average snowpacks have several irrigation districts looking at shutting off or rationing water this summer. At the end of January, precipitation in the Yakima River Basin was 63% of normal for the water year. Water content in the snowpack is only 18-23% of normal. The Bureau of Reclamation will issue it's first water-supply forecast in February.

The bees in Western Washington had plenty of opportunities to take cleansing flights during January as temperatures were frequently warm. The weather also brought nor some early ornamental plants. Bees winter in Central and Eastern Washington are reported to be in good condition and were seen out of their hives on sunny days. Some Varroa Mites were detected on dead bees when the rest of the colony did some housekeeping. The clusters are reported to be small and active but most beekeepers don't open their hives until spring as they are wrapped for the winter. Some beekeepers are waiting to order packages until they can see how many losses they have. Honey prices have dropped below last year so some producers are currently storing last years crop.

Migratory beekeepers went to California the end of January to move their bees from holding yards to almond orchards. Losses from Varroa Mites had some beekeepers scrambling to get enough healthy colonies to fill their contracts. Locally, there are concerns about having enough bees to pollinate Washington crops. Some out-of-state beekeepers have indicated they will go home or to a warmer location to let their bees rebuild after winter losses rather than come to the northwest.

**WISCONSIN** ... Temperatures the first of the month were near normal, however no single digit temperatures were reported. Precipitation levels, the first of the month, improved due to a later than normal measurable snowfall the last of December. Some snow fell over the northern section the first part of the month but they reported lighter snowfall than normal. Mid-month, most of Wisconsin had received more normal snowfall. Some beekeepers had finished pulling fall mite strips from their hives. Most beekeepers had begun supplemental feeding. Due to the weather conditions, most bees were overwintering well if the hives was not been infested with mites.

Some Apiary Program statistics for the state this past honey crop season shows a decrease in out-of-state colonies from 41,165 to 38,218 in 2004 and a decrease of out-of-state queens and packages from 49,226 to 29,925 in 2004. The State's fall survey of Wisconsin honey producers showed a marked increase in Varroa mite infested bee hives from 77% in 2004 compared to 58 % in 2003 and 46% in 2002. The survey pointed to higher numbers of Varroa mites that had been treated with the miticide CheckMite, indicating that Varroa may be becoming resistant to this control treatment. Since Varroa resistance to the miticide Apistan (active ingredient fluvalinate) has already been established in the state, this will make control of Varroa mites even more difficult for beekeepers. Survey data also concluded that hives with queens bred for resistance had an overall lower mite presence. The State's apiary Inspector recommends beekeepers test their colonies. Cleansing flights had been more numerous than normal due to favorable weather conditions.

Honey and wax sales were good due limited available supplies in beekeepers hands. The main beekeeper activity for the month was attending local beekeepers meetings and repairing bee equipment.

## U.S. EXPORTS OF HONEY BY COUNTRY OF DESTINATION, QUANTITY &amp; VALUE

	<b>N O V E M B E R 2 0 0 4</b>		<b>Y E A R T O D A T E 2 0 0 4</b>	
	QUANTITY Kilograms	VALUE Dollars	QUANTITY Kilograms	VALUE Dollars
<b>COMB HONEY &amp; HONEY PACKAGED FOR RETAIL SALE ----- DOMESTIC MERCHANDISE</b>				
Aruba	---	---	1,209	9,287
The Bahamas	---	---	1,588	3,710
Bahrain	---	---	1,951	5,608
Bermuda	---	---	1,090	5,044
China, Peoples Rep. of	1,905	6,510	24,372	82,101
Dominican Republic	---	---	1,083	9,959
France	---	---	4,057	5,321
Haiti	---	---	528	2,591
Hong Kong	---	---	37,033	66,053
Israel	---	---	19,200	10,236
Japan	---	---	73,590	148,896
Korea, Republic of	3,365	9,837	110,690	247,253
Kuwait	---	---	169,452	228,674
Malaysia	---	---	16,069	21,076
Mexico	---	---	2,333	3,060
Netherlands Antilles (ex. Aruba)	---	---	2,029	10,777
Philippines	---	---	194,077	275,402
Saudi Arabia	---	---	385,566	515,564
Turkey	---	---	3,000	7,248
United Arab Emirates	---	---	60,802	79,755
Yemen	---	---	173,066	398,864
<b>SUB-TOTAL</b>	<b>5,270</b>	<b>15,987</b>	<b>1,282,785</b>	<b>2,136,479</b>
<b>HONEY, NATURAL, NOT ELSEWHERE INDICATED OR SPECIFIED ----- DOMESTIC MERCHANDISE</b>				
Aruba	---	---	561	2,579
Australia	12,740	30,900	26,180	63,900
Bahamas	927	2,758	3,605	9,575
Bahrain	---	---	2,105	10,683
Barbados	---	---	5,090	18,532
Bermuda	627	2,989	10,630	48,245
Canada	72,477	197,432	412,815	1,032,770
Cayman Islands	---	---	972	3,672
Chile	---	---	42,842	112,406
China, Peoples Rep. of	---	---	172,438	324,465
Costa Rica	3,172	11,054	47,328	136,971
Denmark	---	---	17,340	22,745
France	---	---	1,088	3,996
Germany	---	---	38,746	73,659
Guatemala	---	---	561	2,579
Guyana	---	---	1,687	5,357
Hong Kong	---	---	510	4,092
Indonesia	---	---	19,976	48,360
Israel	---	---	230,400	398,848
Japan	3,563	12,485	210,656	713,644
Korea, Republic of	---	---	65,384	135,683
Kuwait	---	---	232,017	356,706
Mexico	---	---	9,717	12,745
Nepal	---	---	1,642	8,823
New Zealand*	---	---	2,722	9,471
Oman	---	---	13,022	17,080
Pakistan	---	---	11,371	9,847
Panama	561	2,579	2,803	12,894
Philippines	---	---	51,078	192,060
Qatar	---	---	4,741	16,757
Saudi Arabia	11,714	43,606	45,101	135,570

**EXPORTS continued**

Singapore	8,822	11,572	28,588	37,498
Taiwan	---	---	35,434	12,600
United Arab Emirates	60,489	79,344	124,209	162,927
Yemen	21,688	65,293	43,376	130,586
<b>SUB-TOTAL</b>	<b>196,780</b>	<b>460,012</b>	<b>1,916,735</b>	<b>4,288,325</b>
<b>GRAND TOTAL</b>	<b>202,050</b>	<b>475,999</b>	<b>3,199,520</b>	<b>6,424,804</b>

**U. S. IMPORTS OF HONEY BY COUNTRY, QUANTITY AND VALUE**

COUNTRY	N O V E M B E R 2 0 0 4			Y E A R T O D A T E 2 0 0 4		
	QUANTITY kilograms	CUSTOMS VALUE dollars	C.I.F. VALUE dollars	QUANTITY kilograms	CUSTOMS VALUE dollars	C.I.F. VALUE dollars
<b>NATURAL HONEY, NOT PACKAGED FOR RETAIL SALE - - - WHITE</b>						
Argentina	918,778	1,763,517	1,845,630	1,994,003	4,080,411	4,297,166
Australia	---	---	---	604,112	1,394,428	1,430,470
Brazil	38,858	77,360	84,136	472,665	1,091,537	1,158,723
Bulgaria	54,810	110,376	115,101	67,494	134,043	140,368
Canada	1,267,738	2,953,873	2,971,063	7,943,629	22,094,467	22,248,926
Chile	---	---	---	330,724	897,194	925,210
China, Peoples Rep. of	1,817,720	1,930,341	2,227,675	13,375,801	17,341,781	19,317,184
Germany	---	---	---	108,092	231,180	241,420
Hungary	---	---	---	51,542	106,328	113,468
India	95,700	150,730	166,730	1,742,232	3,011,475	3,211,286
Indonesia	---	---	---	144,667	239,048	260,177
Mexico	56,770	106,912	111,827	522,844	1,205,088	1,237,329
Moldova, Republic of	---	---	---	18,820	35,479	37,264
New Zealand*	---	---	---	3,677	20,996	21,916
Pakistan	57,100	86,450	96,313	377,160	580,385	633,739
Peru	18,600	31,689	34,689	370,970	799,883	842,724
Poland	---	---	---	132,240	301,429	309,957
Russian Federation	156,755	180,418	206,958	685,926	917,341	1,089,567
Spain	---	---	---	435	5,272	5,349
Turkey	39,147	85,279	89,262	158,547	335,931	352,644
Ukraine	93,790	185,553	195,681	249,091	512,407	533,761
United Kingdom	3,065	9,635	9,992	18,790	54,028	56,349
Uruguay	---	---	---	529,819	1,218,806	1,242,330
Vietnam	---	---	---	59,136	86,304	86,306
<b>SUB-TOTAL</b>	<b>4,618,731</b>	<b>7,672,133</b>	<b>8,155,057</b>	<b>29,962,416</b>	<b>56,695,241</b>	<b>59,793,633</b>

**NATURAL HONEY, NOT PACKAGED FOR RETAIL SALE - - - EXTRA LIGHT AMBER**

Argentina	230,137	464,247	479,845	278,016	564,429	585,449
Australia	---	---	---	97,500	199,727	207,177
Austria	450	3,564	3,777	5,758	31,388	33,393
Brazil	191,790	326,484	349,719	296,133	530,998	564,192
Canada	8,228	18,576	18,726	101,041	252,613	253,574
Chile	---	---	---	304,530	697,496	722,231
China, Peoples Rep. of	1,234,820	1,303,994	1,464,981	3,923,430	4,536,754	5,032,703
Czech Republic	36,938	82,721	86,702	36,938	82,721	86,702
Egypt	---	---	---	119,385	229,884	241,344
Guatemala	---	---	---	20,100	37,688	39,876
India	99,827	113,240	121,856	216,639	245,779	265,415
Indonesia	---	---	---	1,185,520	1,139,409	1,358,394
Mexico	211,413	354,421	377,661	656,544	1,392,798	1,443,294
Peru	---	---	---	19,500	29,850	32,850
Romania	75,040	144,117	150,641	112,837	232,780	243,287

**IMPORTS continued...**

Russian Federation	---	---	---	71,760	116,392	123,146
Thailand	---	---	---	98,600	157,760	175,260
Mexico	20,160	35M546	35M549	719,487	1,749,944	1,770,696
Poland	---	---	---	9,327	20,682	21,769
Turkey	---	---	---	96,000	198,400	201,844
Ukraine	---	---	---	35,917	71,630	76,201
Uruguay	11,096	19,141	20,158	1,183,459	2,685,437	2,788,478
Vietnam	57,420	70,052	73,402	323,668	478,529	523,182

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<b>SUB-TOTAL</b>	<b>2,157,159</b>	<b>2,900,557</b>	<b>3,147,468</b>	<b>9,183,275</b>	<b>13,912,462</b>	<b>14,997,992</b>
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**NATURAL HONEY, NOT PACKAGED FOR RETAIL SALE - - - LIGHT AMBER**

Argentina	96,866	178,585	184,242	405,274	769,043	800,475
Armenia, Rep. of	---	---	---	6,560	31,289	34,320
Brazil	419,590	650,316	746,858	2,186,375	4,377,292	4,740,858
Bulgaria	73,496	137,018	141,744	432,614	938,351	986,754
Canada	21,453	37,353	37,603	60,077	159,741	161,886
Chile	---	---	---	189,458	412,112	432,207
China, Peoples Rep. of	972,036	663,810	763,410	6,383,652	5,741,676	6,303,757
Czech Republic	18,850	35,620	37,609	222,875	525,861	547,325
Dominican Republic	1,158	3,405	3,513	3,456	8,010	8,260
Egypt	---	---	---	4,619	10,807	12,777
France	806	3,114	3,293	6,116	36,115	38,352
Germany	---	---	---	115,222	263,941	276,646
Greece	126	3,289	4,392	126	3,289	4,392
Hungary	37,200	70,965	74,115	50,468	124,001	129,251
India	831,147	964,741	1,081,021	4,617,792	6,412,801	7,056,365
Indonesia	---	---	---	74,240	78,897	81,947
Israel	---	---	---	7,301	36,875	39,617
Italy	2,610	8,327	8,939	3,030	10,971	11,675
Japan	284	3,577	3,705	284	3,577	3,705
Kenya	---	---	---	1,253	5,658	6,956
Lithuania	---	---	---	23,847	110,968	114,331
Mexico	17,400	21,315	22,251	498,994	970,330	998,063
New Zealand*	---	---	---	23,847	110,968	114,331
Pakistan	---	---	---	38,000	56,164	62,001
Peru	---	---	---	138,392	298,060	311,949
Poland	---	---	---	16,641	30,475	32,450
Portugal	---	---	---	214	2,616	2,718
Romania	---	---	---	698,290	1,649,121	1,714,531
Russian Federation	95,225	116,365	135,220	230,887	334,777	415,825
Spain	1,630	14,099	14,448	8,359	64,025	67,200
Switzerland	---	---	---	3,936	16,343	17,844
Taiwan	---	---	---	20,940	47,760	51,025
Thailand	---	---	---	613,500	1,239,834	1,314,022
Turkey	---	---	---	205,000	535,346	564,962
Ukraine	---	---	---	673,181	1,456,811	1,517,861
Uruguay	---	---	---	1,002,737	2,048,588	2,136,791
Vietnam	446,640	489,660	538,314	8,683,848	10,982,718	12,280,529

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<b>SUB-TOTAL</b>	<b>3,036,517</b>	<b>3,401,559</b>	<b>3,800,677</b>	<b>27,629,294</b>	<b>39,800,633</b>	<b>43,286,421</b>
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**NATURAL HONEY, NOT PACKAGED FOR RETAIL SALE – NOT ELSEWHERE SPECIFIED OR INDICATED**

Australia	---	---	---	10,427	65,128	67,055
Brazil	19,445	36,946	40,211	144,553	336,699	373,400
Canada	39,884	88,891	90,517	148,850	279,788	283,295
Chile	---	---	---	19,010	35,169	37,169
China, Republic of	---	---	---	249,241	224,656	256,756
Djibouti Arars-Issas	---	---	---	693	2,426	2,659
Dominican Republic	---	---	---	94,544	53,840	60,156
Egypt	---	---	---	3,870	4,485	5,027
Ethiopia	---	---	---	1,054	2,108	2,468
France	15,000	2,065	2,090	16,500	26,417	35,011
Greece	---	---	---	395	2,024	2,105



**IMPORTS continued**

Hong Kong	---	---	---	7,776	49,248	51,399
Israel	---	---	---	8,339	26,861	28,515
Italy	2,316	19,265	19,809	7,402	38,385	41,217
Malaysia	---	---	---	41,412	90,000	95,300
Portugal	---	---	---	4,040	9,472	9,829
Romania	---	---	---	39,622	118,747	126,247
Mexico	20,160	35M546	35M549	719,487	1,749,944	1,770,696
Poland	---	---	---	9,327	20,682	21,769
Spain	618	2,976	3,058	618	2,976	3,058
Switzerland	2,543	25,553	26,793	21,774	192,511	201,824
Taiwan	---	---	---	30,579	100,746	102,543
Thailand	---	---	---	18,000	29,700	30,528
Turkey	---	---	---	600	4,200	4,642
United Kingdom	---	---	---	394	3,243	3,719
Vietnam	---	---	---	117,000	117,925	139,245
<b>SUB-TOTAL</b>	<b>99,966</b>	<b>211,242</b>	<b>218,027</b>	<b>1,715,518</b>	<b>3,589,380</b>	<b>3,755,632</b>

<b>GRAND TOTAL</b>	<b>9,912,373</b>	<b>14,185,491</b>	<b>15,321,229</b>	<b>68,490,503</b>	<b>113,997,716</b>	<b>121,833,678</b>
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\* Excluding Cook Islands, Niue and Tokelau

SOURCE: Department of Commerce, Foreign Trade Division

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## Pacific Northwest Honey Bee Pollination Survey – 2004

BY: Michael Burgett, Professor Emeritus

Department of Horticulture; Oregon State University, Corvallis, OR 97331

Since 1986 the Honey Bee Laboratory at Oregon State University has conducted an annual survey of pollination economics in the Pacific Northwest (PNW). The information from each year of the survey has been made available both regionally and nationally. The information has proved to be valuable to individual beekeepers that generate income from pollination rental.

The use of managed honey bee colonies for commercial crop pollination remains the most important function of the PNW beekeeping industry. The vast and diverse agriculture of the PNW relies on a healthy and strong beekeeping industry to maintain optimum production. An enhanced knowledge of pollination economics is critical to every beekeeper that enters into the world of commercial crop pollination. It is also important for those growers who contract honey bee colonies for managed pollination to understand current economic conditions of the beekeeping industry.

The pollination requirement for commercial agriculture in the PNW is enormous. Between Washington, Oregon and Idaho there are 355,000 acres of crops grown that require or benefit from managed honey bee pollination. The “farm-gate” value of those combined crops for the production year 2003 was \$1,683,600,000! Nearly half of those acres and 60% of the dollar value are in one crop – apples.

The USDA National Agriculture Statistical Service estimates that there are 200,000 production honey bee colonies in the PNW. And with these numbers there are some interesting hypothetical calculations that can be made. Each grower renting 2 colonies for each acre of blooming crop (355,000 acres) would produce a rental requirement of 710,000 colonies. If we multiple this by the 2003 average colony rental fee (\$36) it results in a potential pollination rental income for beekeepers of more than 25 million dollars. If we add to that the combined hypothetical almond pollination income (ten million dollars) we end up with a gross pollination income of 35 million dollars for PNW commercial pollinators. Another way to look at this is how much pollination income should be produced from one commercial colony in one year? That figure is \$175.

Comparing the hypothetical PNW rental income (25 million \$) to the farm-gate value of the crops pollinated in the PNW (1.7 billion \$) shows that the money spent by growers to insure adequate pollination is 1.5% of the value of total crop production. This is another rather dramatic illustration of what a good value colony pollination rental is to PNW commercial agriculture.

This year's survey provides data that continue to show a number of trends, one of which is the dependence of PNW commercial beekeepers on the income generated from colony rentals. For 2004 the average commercial beekeeper reported receiving 55% of his or her annual operating gross from pollination rentals, which is similar to the figure reported for 2003, and is down slightly from previous survey results. This reduction in the dependence on pollination rental income has likely been influenced by the dramatic increase in the wholesale price of honey seen in 2002 and 2003. While the wholesale price of honey was down in 2004 compared to the previous two years, it is still higher than what was paid prior to the Chinese fiasco of honey tainted with antibiotic residues.

One concern for the segment of agricultural industry that requires managed pollination, is that the recent phenomenon of increased honey prices will reduce the number of colonies available for pollination rental. That this has happened has yet to be shown, but for 2003 and 2004 it is obvious that the income percentage from honey sales has increased and correspondingly, the percent of income from pollination rental has decreased, a result primarily from increased honey prices, not a decrease in the level of pollination colony rental activity. However that might be changing. Very dramatic increases for almond pollination rental fees are being reported for the 2005-pollinating season. Almond growers are responding to a potential shortage of colonies available in 2005.

Many Commercial beekeepers in the PNW and elsewhere, are observing serious autumn and early winter colony losses. While the exact nature of these losses is unknown at this time, it is suspected that widespread failure of EPA registered miticides is responsible.

For 2004 the average pollination rental fee, computed from commercial beekeeper rentals on all crops reported, was \$38<sup>65</sup>. This is an increase of \$2<sup>20</sup> (6%) from the average pollination fee charged in 2003 (\$36<sup>45</sup>) (see Table 1 and Figure 1).

In past years commercial beekeepers have been responsible for 99% of all reported pollination rentals and a corresponding 99% of all pollination income. The data from semi-commercial beekeepers for 2004 were so insignificant that it would be improper to estimate their role in overall pollination rentals. Assuming no dramatic change in the population of semi-commercial beekeepers, they still are minor players in the overall pollination situation for commercial agriculture throughout the PNW.

For a commercial beekeeper the gross amount of income generated from pollination rental leveled off in 1997 and 1998, but increased in 1999 (\$183,780). For 2004 this figure was calculated to be \$265,185. The increase results largely from the increasing size of the average commercial operation.

During the past ten years the average rental fee has increased from \$29<sup>60</sup> (1995) to \$38<sup>65</sup> (2004). It needs to be stressed that honey bee colony rental has for many decades been an underpaid service to the agricultural industry. It is really only within the past ten years that rental fees have begun to more accurately reflect the enormous value-added service of managed pollination. This is shown by the 110% increase in the average pollination fee during the last fifteen years; 1990 = \$18<sup>40</sup> to 2004 = \$38<sup>65</sup>.

In 2004, for crops pollinated in the PNW, cucumber pollination once again provided the highest average fee at \$46<sup>70</sup> per colony rental. The cucumber "average" is calculated from the five corresponding beekeepers reporting cucumber pollination. In terms of acreage, apples are the largest crop grown in the region and this is reflected by the large number of reported rentals (13% of all rentals and 9% of the total reported rental income.) For 2004 more commercial beekeepers reported pollinating sweet cherries than in previous surveys. Sweet cherries accounted for almost 20% of the total rentals and 17% of pollination income.

Berry crops (blackberries, raspberries and blueberries), which as late spring to early summer bloomers and copious nectar producers (blackberries and raspberries), often produce honey crops as well as pollination fees. The 2004 average pollination fee for all combined berry crops was \$27<sup>30</sup>.

The average PNW commercial honey bee colony was rented 1.93 times in 2004 and this includes California almonds. This is a slight decrease from the past several years. This statistic had been dropping since 1999 when the average number of rentals per colony was 2.77. Does this actually reflect the real world situation? Are commercial beekeepers concentrating on almonds and PNW tree fruit (which historically provide the major sources of pollination income) and reducing the number of colonies involved in minor crop pollination? At this time our data are not able to provide a reasonable answer to this question.

For the 2004 pollination season an average rental fee of \$38<sup>65</sup>, combined with an average of 1.93 pollination sets per colony, results in an annual per colony pollination income of \$74<sup>60</sup>, which is down from the 2003 colony income statistic of \$86<sup>40</sup>. And with the "average" commercial operation running 3,555 colonies, a hypothetical gross pollination income for the "average" commercial beekeeper was \$265,200 in 2004.

The combined colony numbers from those commercial beekeepers that responded to the 2004 survey, (53,345 hives), represent about one-half of the USDA's estimate of colony numbers in Oregon and Washington. Therefore, if we multiply the reported pollination income reported by beekeepers responding to the survey (\$3,979,300) by a factor of 2, we have a ballpark estimate of the pollination income generated by commercial beekeeping in the PNW, i.e., a regional pollination income of approximately \$8,000,000. This is far more than the normal "estimates" assigned to the bee industry by agricultural economists, who, for reasons unexplained, usually do not include pollination rental income in their estimates of the beekeeping industry economic status. Pollination income in the PNW far exceeds the value of honey and wax sales for our regional beekeeping industry. Pollination rental income is frequently four to five times greater than honey and wax sales in any given year.

A new question in the 2004 survey asked commercial beekeepers to report the total number of full-time or full-time equivalent employees working for their operations. That figure for the "average" commercial beekeeping operation is 2.9 full-time employees. Another interesting way to look at this is would be to ask the question "what is the 'colony equivalent'", meaning what is the average number of colonies necessary to hire one full-time employee. That figure is very close to 1,500 colonies/employee.

While colony income from pollination rental is a critical statistic, so therefore is the annual cost to maintain a healthy hive of honey bees. Responses to this question on the survey have varied widely, often from a misunderstanding of what was being asked. However, numerous commercial beekeepers, which have over the years maintained good cost accounting records, have responded with numbers that are very reasonable relative to today's economy. The average annual hive maintenance cost was \$99 per colony for the year 2004 (highest reported per colony maintenance cost = \$150; lowest = \$60). This is down from recent years (\$112 for 2003). It is very doubtful that maintenance costs are going down at a time of increasing operating costs, so this "average" cost per colony should not be taken as a statistically rock solid figure. It also suggests that beekeepers should try to be more precise in calculating their operational costs.

It is very important to recognize that the average colony maintenance cost is higher than the average per colony pollination income. From the 2004 survey, pollination income was \$74<sup>60</sup>/colony and the colony maintenance cost was \$99; a difference of \$24<sup>40</sup> per colony. This illustrates that operation profits are generated by sources of income outside of pollination rental, most importantly, honey production. Depending on when you sold or contracted your honey in 2004, the wholesale price was from a low of \$0<sup>85</sup> to as much as \$1<sup>35</sup> per pound. Basing wholesale honey prices at a conservative \$1<sup>10</sup> per pound, the average commercial hive had to produce about 22 pounds of honey per colony in order to break even.

Remember that the data presented here represent the pollination rental situation of a hypothetical "average" commercial beekeeper in the Pacific Northwest. For individual beekeepers the survey results are most useful as benchmarks against which they should compare their individual operations. Please let me stress again that all of these "projections" are only as accurate as the data provided by responding beekeepers. The projections also assume that the participating beekeepers collectively represent the mainstream of commercial beekeeping in the Pacific Northwest.

I wish to again thank all those beekeepers in Oregon and Washington who took the time to participate in the survey, which over the past nineteen years has generated the most accurate assessment of commercial pollination known in the U.S.

**Table 1. Average Pollination Fee 1993-2004**

| <u>1993</u> | <u>1994</u> | <u>1995</u> | <u>1996</u> | <u>1997</u> | <u>1998</u> | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 22.50       | 28.10       | 29.60       | 31.55       | 31.05       | 29.65       | 32.25       | 32.85       | 33.65       | 36.40       | 36.45       | 38.65       |

**Table 2. 2004 Average Commercial Pollination Fees by Crop (responding commercial beekeepers)**

| <u>Crop</u>              | <u>No. Rentals</u> | <u>Average Fee</u> | <u>Income(\$)</u> |
|--------------------------|--------------------|--------------------|-------------------|
| Pears                    | 7,394              | \$31 <sup>30</sup> | 231,525           |
| Cherries                 | 20,305             | \$33 <sup>65</sup> | 683,560           |
| Apples                   | 13,019             | \$28 <sup>25</sup> | 367,800           |
| Berries <sup>1</sup>     | 2,753              | \$22 <sup>90</sup> | 63,030            |
| Blueberries              | 2,632              | \$31 <sup>85</sup> | 83,823            |
| Cranberries              | 32                 | \$24 <sup>00</sup> | 768               |
| Vegetable seed           | 5,768              | \$37 <sup>95</sup> | 218,772           |
| Clover seed <sup>2</sup> | 897                | \$32 <sup>60</sup> | 29,220            |
| Crimson clover seed      | 2,120              | \$0 <sup>85</sup>  | 1,800             |
| Radish seed              | 414                | \$24 <sup>10</sup> | 9,980             |
| Cucumbers                | 1,491              | \$46 <sup>70</sup> | 69,615            |
| Sq. & Pump. seed         | 539                | \$31 <sup>80</sup> | 17,127            |
| Watermelon               | 1,216              | \$34 <sup>55</sup> | 42,020            |
| Misc. <sup>3</sup>       | 24                 | \$32 <sup>00</sup> | 768               |
| Almonds                  | 44,339             | \$48 <sup>70</sup> | 2,159,012         |

**SUMMARY = 102,943 rentals generating \$3,979,3000 - - - Average Pollination Fee = \$38<sup>65</sup>**

<sup>1</sup>Includes blackberries, raspberries, Marionberries, & Loganberries.

<sup>2</sup>Includes red & white clover as grown for seed. <sup>3</sup>Plums.

**Table 3. Average colony numbers, average rental fee per hive, and average annual rental income per hive for a commercial beekeeping operation in the Pacific Northwest 1992-2004.**

| <u>Year</u> | <u>Average<br/>No.<br/>Colonies</u> | <u>Average<br/>Rental<br/>Fee</u> | <u>Average Annual<br/>Rental Income<br/>per Colony</u> |
|-------------|-------------------------------------|-----------------------------------|--------------------------------------------------------|
| 1992        | 765                                 | \$19 <sup>25</sup>                | \$49 <sup>70</sup>                                     |
| 1993        | 990                                 | \$22 <sup>50</sup>                | \$62 <sup>25</sup>                                     |
| 1994        | 1,225                               | \$28 <sup>10</sup>                | \$78 <sup>70</sup>                                     |
| 1995        | 1,348                               | \$29 <sup>60</sup>                | \$78 <sup>15</sup>                                     |
| 1996        | 1,350                               | \$31 <sup>55</sup>                | \$97 <sup>50</sup>                                     |
| 1997        | 1,504                               | \$31 <sup>05</sup>                | \$92 <sup>20</sup>                                     |
| 1998        | 1,153                               | \$29 <sup>65</sup>                | \$83 <sup>00</sup>                                     |
| 1999        | 2,058                               | \$32 <sup>25</sup>                | \$89 <sup>30</sup>                                     |
| 2000        | 2,055                               | \$32 <sup>85</sup>                | \$77 <sup>40</sup>                                     |
| 2001        | 3,168                               | \$33 <sup>65</sup>                | \$64 <sup>60</sup>                                     |
| 2002        | 4,255                               | \$36 <sup>40</sup>                | \$63 <sup>75</sup>                                     |
| 2003        | 2,612                               | \$36 <sup>45</sup>                | \$86 <sup>40</sup>                                     |
| 2004        | 3,555                               | \$38 <sup>65</sup>                | \$74 <sup>60</sup>                                     |

### Summary Information - 2004

Total number of participating commercial beekeepers = **15**

Total number of colonies in the survey = **53,345**

Total colony rentals = **102,943**

The average per colony pollination rental fee (for all beekeepers, for all crops including California almonds) was: **\$38<sup>65</sup>**

The average commercial colony was placed in **1.93** pollination sets in 2004, for an average per hive rental income of **\$74<sup>60</sup>**

The average commercial bee operation maintained **3,555** colonies and grossed **\$265,200** in pollination rental income for 2004.